

WHAT ENGINEERS WOULD LIKE FROM PILOTS

Better communication.



Pilots and aircraft engineers are co-dependents. Without engineers, pilots could not fly safely. Without pilots, engineers would have no job.

The contribution of each is safety-critical, and many engineers say their work would be a lot easier – and dare say, cheaper – if pilots would just communicate more, and more effectively.

Tauranga-based engineer Colin Alexander says nobody knows the aircraft better than the pilot.

“But it can be difficult to get an accurate report on defects and observations from them. Sometimes that’s because the pilot just parks the aircraft outside the hangar and walks away.

“It would help us engineers if they spent a few minutes discussing exactly what they are seeing and feeling when they fly.”

In 2016, CASA’s *Flight Safety Australia* magazine noted the following (hypothetical) conversation:

Pilot: *Something’s broken.*

LAME: *What, exactly?*

Pilot: *Not sure. Is it safe to fly home?*

LAME: *No, my crystal ball is also broken.*

The head of engineering at Canterbury Aero Club, Lyn Stead, agrees that communication between pilot and engineer is key.

“Talk to us, that’s the main thing. We can spend a lot of time trying to track down the source of a problem. If someone takes the time to describe what they see, feel, and experience, we get a much better idea of what the problem might be.”

Lyn says many of the pilots he deals with are students from overseas.

“So they don’t have the experience, nor sometimes the language, to explain what’s going on. In those situations, if they’re on the ground, or have another person in the cockpit, I suggest they take a video when the problem occurs, so we can see and hear what’s happening. That helps a heck of a lot.”

Colin Alexander says when a pilot returns to pick up the aircraft, it’s also helpful if they spend time with the engineer.

“It’s always worthwhile if a pilot allows a bit of time to find out what we did, inspect the work done, and discuss future maintenance.”

The engineers say it’s of benefit, for instance, if a pilot gives them a heads-up if the use of the aircraft is to change before the next scheduled maintenance check. For example, significantly more flight training could mean increased loads on the undercarriage.

// It's always worthwhile if a pilot allows a bit of time to find out what we did, as well as to discuss further maintenance. //

For want of a tech log...

Know that proverb that starts, 'For want of a nail'? It's the cautionary tale about how seemingly unimportant oversights can lead to catastrophe.

A tech log is a key communication tool between pilot and engineer. Therefore, and not incidentally, it's an operator breach of rule 91.619 if an aircraft tech log is incomplete or inaccurate.

And yet, engineers say some aircraft are delivered to them where the accompanying tech log hasn't been touched since the issue date.

Rangiora-based engineer Pat Scotter says it's not the role of the LAME to play detective and try to trace unrecorded work. »



// Engineer Pat Scotter and pilot Robbie Meyer discuss an oil leak on Robbie's Piper Warrior.

“Engineers determine their work [order] based, in part, the information in the tech log. So as well as identifying the due dates of the next inspection and review of airworthiness, the log should note any other maintenance due before the next scheduled inspection.

“That might be something like a requirement to have the ELT battery changed, or complying with the instructions of an airworthiness directive.

“The operator must also record a progressive total of hours in service – and in some cases, cycles – ensuring that any maintenance items called up are attended to,” says Pat.

Learning a bit about the engine

Lyn Stead says some pilots, owners, and operators have a natural interest in their aircraft’s engine. Others don’t.

“It wouldn’t hurt if they learned enough to do some troubleshooting themselves. For instance, rough running might just need the mixture leaned, or carb heat applied. Or they could test the mags by switching back and forth. That may fix the problem or at least isolate it a little more for the engineers.”

One of the more frequent problems Lyn sees is inexperienced pilots, in starting the engine, will over-prime it, flooding it, and causing it to backfire.

“Quite a lot of them don’t know what to do then, or are scared to do anything. They need to keep the engine motoring over so if there’s a fire in the induction system, it will draw it back into the engine.

“When they do nothing, a fire can ignite in the hot air box and round the air filter, and next minute they have smoke coming out of the engine.

“Not good for anybody’s nerves,” he laughs.

Money and time

Lyn says if for no other reason, communicating properly with the engineer may save time and therefore money.

“Clearly, without a heads-up, it takes longer to find out what the problem is. You have to go through a certain process, resolve certain questions, and sometimes the aircraft has to be test flown to prove that (a) there is a problem, and (b) where it actually is. This takes time, and money.

“Some owners can say, ‘why did it take you so long to work out that problem was just a loose nut?’ But it maybe took two or three hours to track down that loose nut.”

Pilots can carry out some maintenance on their aircraft in accordance with rule 43.51. That includes being trained

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by a LAME and authorised by the operator to carry out specific maintenance in Appendix A of Part 43.

Microflight maintenance must be carried out in accordance with rule 103.217.

But just because a pilot can legally carry out maintenance, it doesn’t, according to Colin Alexander, always means they should.

“Engineers tend to take a more ‘holistic’ approach to aircraft maintenance. They’re generally better at observing overall aircraft condition,” he says.

“For example, if a pilot is changing an oil filter, their total focus tends to be only on the oil filter, especially if it’s a relatively new task.

“The engineer, on the other hand, who’s doing this task every day, tends to pick up other defects while changing that oil filter. For instance, wires chafing, loose screws, and oil or induction or exhaust leaks.

“So having maintenance carried out by a professional could save pilots time and money in the long run.” ➔

CLARIFICATION

In the Autumn 2019 *Vector* article, “All about IA holders”, we inferred that an IA holder is working under a delegation from the Director.

Although the IA certificate is issued by the Director, the work carried out by the IA holder is under the privileges of their certificate.